

**Abstract**

The invention pertains to murine TLR9 and related TLR9s which include murine-specific amino acids, as well as nucleic acids which encode those polypeptides. The present invention also includes fragments and biologically functional variants of the murine TLR9. The invention further relates to methods of using such murine and non-murine TLR9 nucleic acids and polypeptides, especially in methods for screening for agonists and antagonists of immunostimulatory CpG nucleic acids. Also included are murine TLR9 inhibitors which inhibit murine TLR9 activity by inhibiting the expression or function of murine TLR9. In a further aspect the present invention pertains to murine TLR7 and murine TLR8, as well as related TLR7 and TLR8 molecules which include murine-specific amino acids, as well as nucleic acids which encode those polypeptides. The present invention also includes fragments and biologically functional variants of the murine TLR7 and TLR8. Methods are included for screening for ligands of TLR7 and TLR8, as well as for inhibitors and agonists and antagonists of signaling mediated by TLR7 and TLR8.

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